Amendments to the Claims

1. (Currently amended) A chemical mixing system for chemical mechanical polishing ~~making~~ including a chemical mechanical polishing slurry having ~~a desired~~ an insoluble solids content ~~within a qualification range, said chemical mixing system~~ comprising:

(a) a mix vessel containing a mix volume suitable for preparing ~~the~~ a chemical mechanical polishing slurry from at least first and second chemical components, wherein at least one of the chemical components comprises ~~a plurality of~~ insoluble solid particles, and wherein the mix volume is adapted to receive the chemical components from at least first and second component sources, respectively;

(b) a control system responsive to information comprising a measured conductivity value of the chemical mechanical polishing slurry, wherein said control system generates a control signal to control the addition of at least one of the chemical components to the mix volume when ~~a~~ the chemical mechanical polishing slurry is prepared so that the addition of the at least one chemical component can be ceased when the chemical mechanical polishing slurry has a measured conductivity value corresponding to ~~the~~ a reference conductivity; ~~and~~

(c) at least one valve disposed in the chemical mixing system at a position effective to regulate the amount of the at least one chemical component added to the mix volume, wherein the at least one control valve is actuated in response to information comprising the ~~valve~~ control signal generated by the control system and operative to vary the rate of addition of the at least one chemical component in response to the measured conductivity value of the chemical mechanical polishing slurry; and

(d) a chemical mechanical polishing slurry having an insoluble solids content resulting from a mixture of at least the first and second chemical components.

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2. (Currently amended) The chemical mixing system of claim 1, wherein the control system further comprises at least one sensor at a position effective to generate a sensor signal when a desired amount of at least one of the chemical components is added to the mix volume, and wherein the control system generates the control signal in response to information comprising both the measured conductivity value and the sensor signal in order to generate a control signal in response to said sensor signal.

3. (Currently amended) The chemical mixing system of claim 1, wherein the control system comprises:

(a) a first sensor at a position effective to detect when a defined amount of one of the chemical components is added to the mix volume; and

(b) a conductivity probe at a position effective to detect when a combined amount of the chemical components has the desired insoluble solids content.

4.(Previously amended) The chemical mixing system of claim 1, wherein at least a portion of an internal surface of the mix vessel comprises a corrosion resistant material selected from the group consisting of an ultra high molecular weight polyethylene, a fluorinated polymer, and polypropylene.

5. (Original) The chemical mixing system of claim 4, wherein the corrosion resistant material is a fluorinated polymer selected from the group consisting of a perfluoralkoxy polymer, polytetrafluoroethylene, fluorinated ethylene propylene, polyvinylidene fluoride, ethylene tetrafluoroethylene, and chlorotrifluoroethylene.

6. (Cancelled) The chemical mixing system of claim 3, wherein the mix volume comprises a mix vessel.

7. (Previously amended) The chemical mixing system of claim 1 further comprising a recirculation loop.

8. (Previously amended) The chemical mixing system of claim 1, wherein the first sensor is located at the mix vessel.

9. (Previously amended) The chemical mixing system of claim 7, wherein the first sensor is located in the recirculation loop.

10. (Previously amended) The chemical mixing system of claim 2, wherein the conductivity probe is located at the mix vessel.

11. (Currently amended) The chemical mixing system of claim 2, wherein the system further comprises a recirculation loop and the conductivity probe is located in the recirculation loop.

12. (Previously amended) The chemical mixing system of claim 1, further comprising a pump operationally coupled to the chemical mixing system to motivate the chemical components through the system.

13. (Previously amended) The chemical mixing system of claim 1, further comprising a discharge line for transmitting the slurry from the mix vessel to a point of use.

14. (Withdrawn): A method of making a slurry having a desired solids content within a qualification range comprising the steps of:

a. adding a desired amount of a diluent to a mix vessel by selectively opening a first valve;

b. recirculating a fluid containing the diluent through a recirculation line and the mix vessel;

c. monitoring a conductivity of the fluid;

d. comparing the monitored conductivity with a first setpoint;

e. adding a concentrated slurry to the fluid by opening a second valve until the monitored conductivity is equal to or greater than the first setpoint;

f. calculating a length of time necessary to add the concentrated slurry to achieve a conductivity equal to a second setpoint greater than the first setpoint;

g. injecting the concentrated slurry for the calculated length of time; and

h. closing the second valve when the monitored conductivity is equal to or greater than the second setpoint, wherein the rate of addition of the concentrated slurry is varied in response to the monitored conductivity.

15. (Withdrawn): The method of claim 14 wherein the first setpoint comprises a coarse blend setpoint.

16. (Withdrawn): The method of claim 14 wherein the second setpoint comprises a fine blend setpoint.

17. (Withdrawn): The method of claim 14 wherein the first setpoint is a desired qualification setpoint, an upper qualification setpoint, a lower qualification setpoint, a coarse blend setpoint, or a fine blend setpoint.

18. (Withdrawn): The method of claim 14 wherein step d further comprises comparing the monitored conductivity with a plurality of values selected from a desired qualification setpoint, an upper qualification setpoint, a lower qualification setpoint, a coarse blend setpoint, or a fine blend setpoint.

19. (Withdrawn): The method of claim 14 wherein step d further comprises comparing the monitored conductivity with an upper qualification setpoint and a lower qualification setpoint.

20. (Withdrawn): The method of claim 19 further comprising an additional step of:

i. calculating a length of time necessary to add the concentrated slurry to the fluid to achieve a conductivity equal to a desired qualification setpoint when the result of step d indicates that the monitored conductivity is less than the lower qualification setpoint and injecting the concentrated slurry for the calculated length of time until the conductivity is equal to the desired qualification setpoint.

21. (Withdrawn): The method of claim 19 further comprising an additional step of:

j. calculating a length of time necessary to add the diluent to the fluid to achieve a conductivity equal to a desired qualification setpoint when the result of step d indicates that the monitored conductivity is greater than the upper qualification setpoint and repeating steps a through d until the monitored conductivity is equal to the desired qualification setpoint.